

What Is Claimed Is:

1. A modular connection for connecting together
a plurality of separate elements so as to form a
5 prosthetic femoral stem component, said modular
connection comprising, in combination, a taper
junction and an engaged-fit junction.

2. A modular connection according to claim 1
10 wherein said taper junction is formed by the
interaction of a first taper with a second taper.

3. A modular connection according to claim 2
wherein said first taper is formed on the shaft of a
15 neck element, and said second taper is formed along a
portion of a sidewall defining an aperture extending
through a body element.

4. A modular connection according to claim 1
20 wherein said engaged-fit junction is formed by the

interaction of a first concentric wall with a second concentric wall.

5 5. A modular connection according to claim 4 wherein said first concentric wall is formed on a shaft of a neck element, and said second concentric wall is formed along a portion of the sidewall defining an aperture extending through a body element.

10 6. A modular connection according to claim 1 wherein:

 said taper junction is formed by the interaction of a first taper with a second taper, with said first taper being formed on the shaft of a neck element, and
15 said second taper being formed along a portion of a sidewall defining an aperture extending through a body element; and

 said engaged-fit junction is formed by the interaction of a first concentric wall with a second
20 concentric wall, with said first concentric wall being formed on the shaft of the neck element, and said

second concentric wall being formed along a portion of the sidewall defining the aperture extending through the body element.

5 7. A modular connection according to claim 6 wherein said first concentric wall is disposed on the shaft of the neck element coaxial with, and distal to, said first taper.

10 8. A modular connection according to claim 7 wherein said second concentric wall is disposed on the body element coaxial with, and distal to, said second taper.

15 9. A modular connection according to claim 4 wherein said first concentric wall is located internally of said second concentric wall.

20 10. A modular connection according to claim 9 wherein said first concentric wall is deformed so as

to be pressure locked against said second concentric wall.

11. A modular connection according to claim 10
5 wherein said first concentric wall is radially
expanded so as to be pressure locked against said
second concentric wall.

12. A modular connection according to claim 11
10 wherein said first concentric wall is formed on a
shaft of a neck element, and said second concentric
wall is formed along a portion of the sidewall
defining an aperture extending through a body element,
and further wherein said first concentric wall is
15 radially expanded by insertion of a stem element into
a recess formed in the neck element.

13. A prosthetic femoral stem component
comprising a body element, a neck element and a stem
20 element, with the body element, neck element and stem
element being secured to one another with a modular

connection, wherein said modular connection comprises,
in combination, a taper junction and an engaged-fit
junction.

5 14. A prosthetic femoral stem component
according to claim 13 wherein said taper junction is
formed by the interaction of a first taper with a
second taper.

10 15. A prosthetic femoral stem component
according to claim 14 wherein said first taper is
formed on the shaft of said neck element, and said
second taper is formed along a portion of a sidewall
defining an aperture extending through said body
15 element.

 16. A prosthetic femoral stem component
according to claim 13 wherein said engaged-fit
junction is formed by the interaction of a first
20 concentric wall with a second concentric wall.

17. A prosthetic femoral stem component
according to claim 16 wherein said first concentric
wall is formed on a shaft of said neck element, and
said second concentric wall is formed along a portion
5 of the sidewall defining an aperture extending through
said body element.

18. A prosthetic femoral stem component
according to claim 13 wherein:

10 said taper junction is formed by the interaction
of a first taper with a second taper, with said first
taper being formed on the shaft of said neck element,
and said second taper being formed along a portion of
a sidewall defining an aperture extending through said
15 body element; and

said engaged-fit junction is formed by the
interaction of a first concentric wall with a second
concentric wall, with said first concentric wall being
formed on the shaft of said neck element, and said
20 second concentric wall being formed along a portion of

the sidewall defining the aperture extending through
said body element.

19. A prosthetic femoral stem component
5 according to claim 18 wherein said first concentric
wall is disposed on the shaft of the neck element
coaxial with, and distal to, said first taper.

20. A prosthetic femoral stem component
10 according to claim 19 wherein said second concentric
wall is disposed on the body element coaxial with, and
distal to, said second taper.

21. A prosthetic femoral stem component
15 according to claim 16 wherein said first concentric
wall is located internally of said second concentric
wall.

22. A prosthetic femoral stem component
20 according to claim 21 wherein said first concentric

wall is deformed so as to be pressure locked against said second concentric wall.

23. A prosthetic femoral stem component
5 according to claim 22 wherein said first concentric wall is radially expanded so as to be pressure locked against said second concentric wall.

24. A prosthetic femoral stem component
10 according to claim 23 wherein said first concentric wall is formed on a shaft of said neck element, and said second concentric wall is formed along a portion of the sidewall defining an aperture extending through said body element, and further wherein said first
15 concentric wall is radially expanded by insertion of said stem element into a recess formed in said neck element.

25. A prosthetic total hip joint comprising a
20 prosthetic femoral stem component and a prosthetic acetabular cup component, wherein said femoral stem

component comprises a body element, a neck element and
a stem element, with the body element, neck element
and stem element being secured to one another with a
modular connection, wherein said modular connection
5 comprises, in combination, a taper junction and an
engaged-fit junction.

26. A method for restoring a hip joint, wherein
the method comprises the steps of:

10 resecting the head of the femur and preparing the
interior of the femur to receive a prosthetic femoral
stem component;

assembling a prosthetic femoral stem component
comprising a body element, a neck element and a stem
15 element by selecting appropriately sized elements and
securing them together with a modular connection,
wherein the modular connection comprises, in
combination, a taper junction and an engaged-fit
junction; and

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seating the prosthetic femoral stem component in
the femur.